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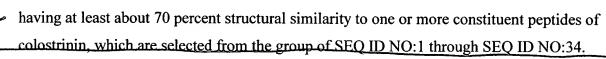Serial No.: 09/641,802
Confirmation No.: 5387
Filed: August 17, 2000
For: USE OF COLOSTRININ, CONSTITUENT PEPTIDES THEREOF, AND ANALOGS THEREOF TO
PROMOTE NEURONAL CELL DIFFERENTIATION

having at least about 70 percent structural similarity to one or more constituent peptides of

colostrinin, which are selected from the group of SEQ ID NO:1 through SEQ ID NO:34.

6.   [AMENDED] The method of claim 1 wherein the neuronal cell regulator is a constituent

peptide of colostrinin.

7.   [AMENDED] The method of claim 6 wherein the neuronal cell regulator is selected

from the group of MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2),

DQPPDVEKPDLQPFQVQS (SEQ ID NO:3), LFFFLPVVNVLP (SEQ ID NO:4),

DLEMPVLPVEPFPFV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6),

VLEMKFPPPPQETVT (SEQ ID NO:7), LKPFPKLKVEVFPFP (SEQ ID NO:8), VVMEV

(SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPPK (SEQ ID NO:12),

DSQPPV (SEQ ID NO:13), DPPPPQS (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLQPE

(SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGPIPN (SEQ ID NO:18), SLPQNILPL

(SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LQPEIMGVPKVKETMVPK (SEQ ID

NO:21), HKEMPFPKYPVEPFTESQ (SEQ ID NO:22), SLTLTDVEKLHLPLPLVQ (SEQ ID

NO:23), SWMHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID

NO:26), LSQPKVLPVPQKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQE (SEQ ID NO:28),

RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP

(SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), and

MHQPPQPLPPTVMFP (SEQ ID NO:34), and combinations thereof.

8.   [AMENDED] The method of claim 7 wherein the neuronal cell regulator is selected

from the group of MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2),

DQPPDVEKPDLQPFQVQS (SEQ ID NO:3), LFFFLPVVNVLP (SEQ ID NO:4),

DLEMPVLPVEPFPFV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6),

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VLEMKFPPPPQETVT (SEQ ID NO:7), LKPFPKLKVEVFPFP (SEQ ID NO:8), and

combinations thereof.

9.   [AMENDED] A method for promoting neuronal cell differentiation in a patient, the

method comprising administering to the patient a neuronal cell regulator selected from the group

of colostrinin, a constituent peptide thereof, an active analog thereof, and combinations thereof,

under conditions effective to promote differentiation of cells to form neuronal cells; wherein the

active analog comprises a peptide having an amino acid sequence with at least about 15 percent

proline and having at least about 70 percent structural similarity to one or more constituent

peptides of colostrinin, which are selected from the group of SEQ ID NO:1 through SEQ ID

NO:34.

11.   [AMENDED] The method of claim 9 wherein the neuronal cell regulator is a constituent

peptide of colostrinin.

12.   [AMENDED] The method of claim 11 wherein the neuronal cell regulator is selected

from the group of MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2),

DQPPDVEKPDLQPFQVQS (SEQ ID NO:3), LFFFLPVVNVLP (SEQ ID NO:4),

DLEMPVLPVEPFPFV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6),

VLEMKFPPPPQETVT (SEQ ID NO:7), LKPFPKLKVEVFPFP (SEQ ID NO:8), VVMEV

(SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPPK (SEQ ID NO:12),

DSQPPV (SEQ ID NO:13), DPPPPQS (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLQPE

(SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGPIPN (SEQ ID NO:18), SLPQNILPL

(SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LQPEIMGVPKVKETMVPK (SEQ ID

NO:21), HKEMPFPKYPVEPFTESQ (SEQ ID NO:22), SLTLTDVEKLHLPLPLVQ (SEQ ID

NO:23), SWMHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID

NO:26), LSQPKVLPVPQKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQE (SEQ ID NO:28),

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RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP

(SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), and

MHQPPQPLPPTVMFP (SEQ ID NO:34), and combinations thereof.

13.   [AMENDED] The method of claim 12 wherein the neuronal cell regulator is selected

from the group of MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2),

DQPPDVEKPDLQPFQVQS (SEQ ID NO:3), LFFFLPVVNVLP (SEQ ID NO:4),

DLEMPVLPVEPFPFV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6),

VLEMKFPPPPQETVT (SEQ ID NO:7), LKPFPKLKVEVFPFP (SEQ ID NO:8), and

combinations thereof.

14.   [AMENDED] A method for treating damaged neuronal cells, the method comprising

contacting nonfunctional neuronal cells with a neuronal cell regulator selected from the group of

colostrinin, a constituent peptide thereof, an active analog thereof, and combinations thereof,

under conditions effective to convert the damaged neuronal cells to functional neuronal cells;

wherein the active analog comprises a peptide having an amino acid sequence with at least about

15 percent proline and having at least about 70 percent structural similarity to one or more

constituent peptides of colostrinin, which are selected from the group of SEQ ID NO:1 through

SEQ ID NO:34, and wherein the nonfunction is the result of neurodegeneration.

15.   [AMENDED] A method for treating damaged neuronal cells in a patient, the method

comprising administering to the patient a neuronal cell regulator selected from the group of

colostrinin, a constituent peptide thereof, an active analog thereof, and combinations thereof,

under conditions effective to convert damaged neuronal cells to functional neuronal cells;

wherein the active analog comprises a peptide having an amino acid sequence with at least about

15 percent proline and having at least about 70 percent structural similarity to one or more

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constituent peptides of colostrinin, which are selected from the group of SEQ ID NO:1 through

SEQ ID NO:34 and wherein the nonfunction is the result of neurodegeneration.